

FIGURE 1

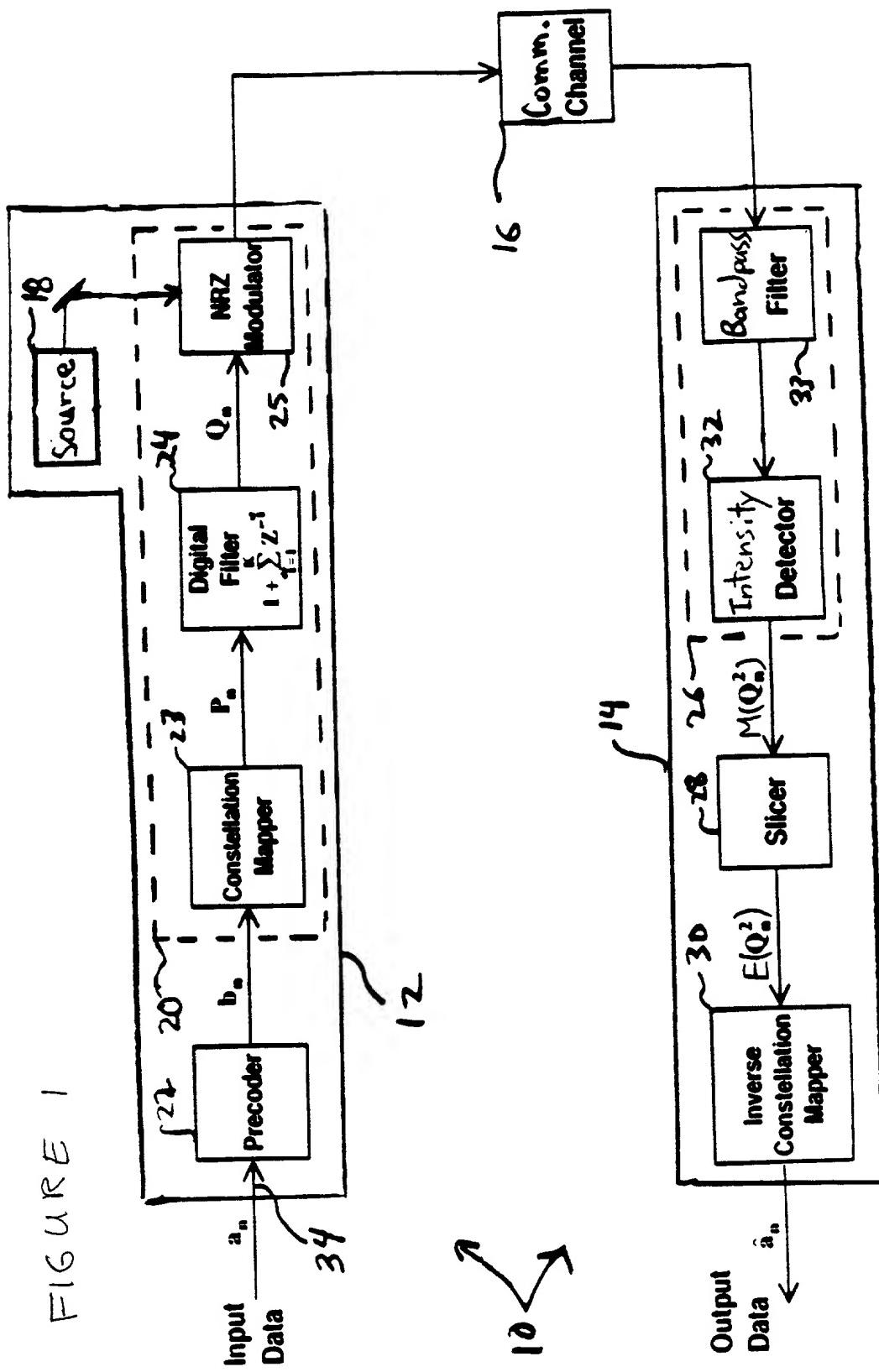


FIGURE 2

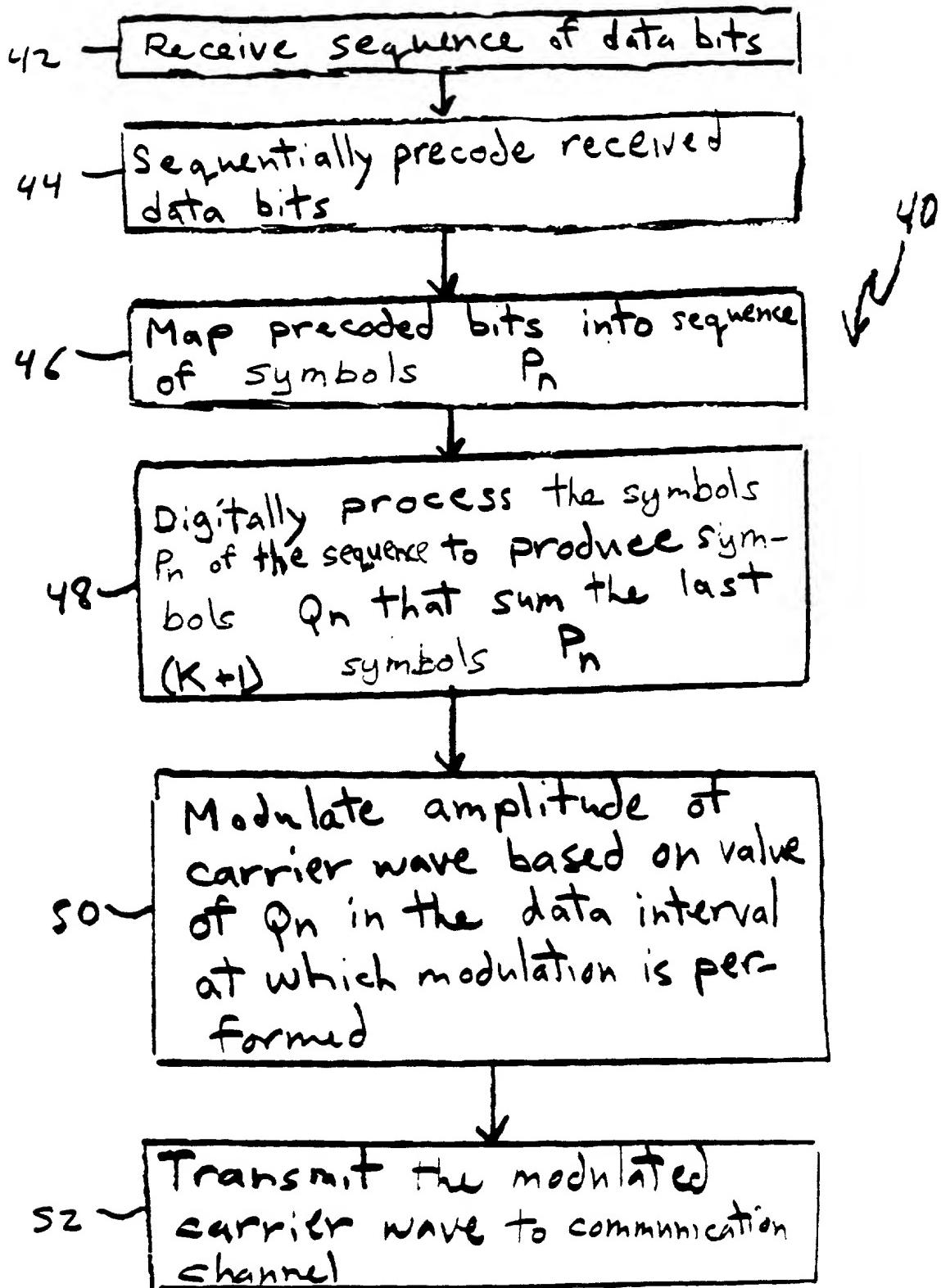


FIGURE 3

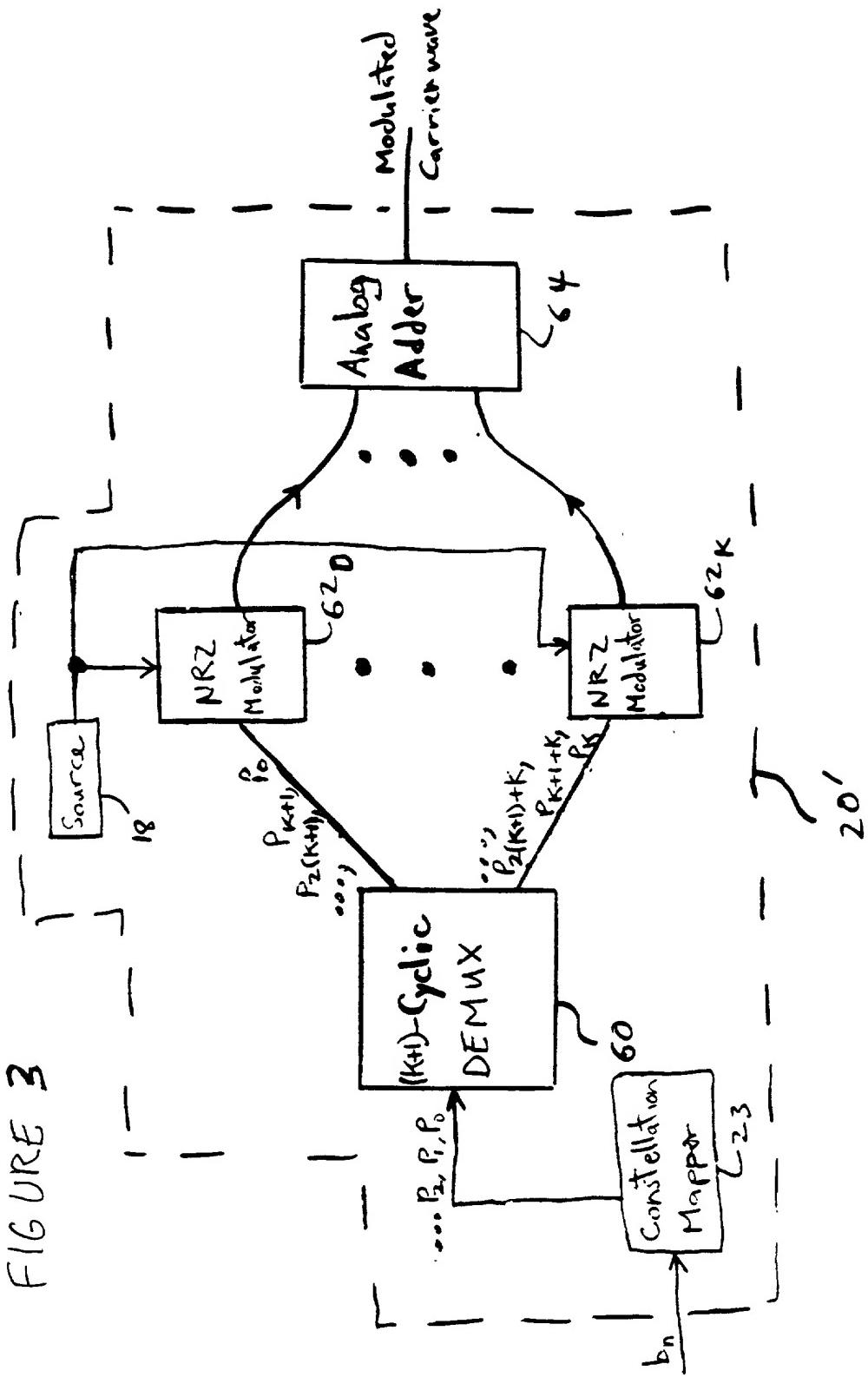
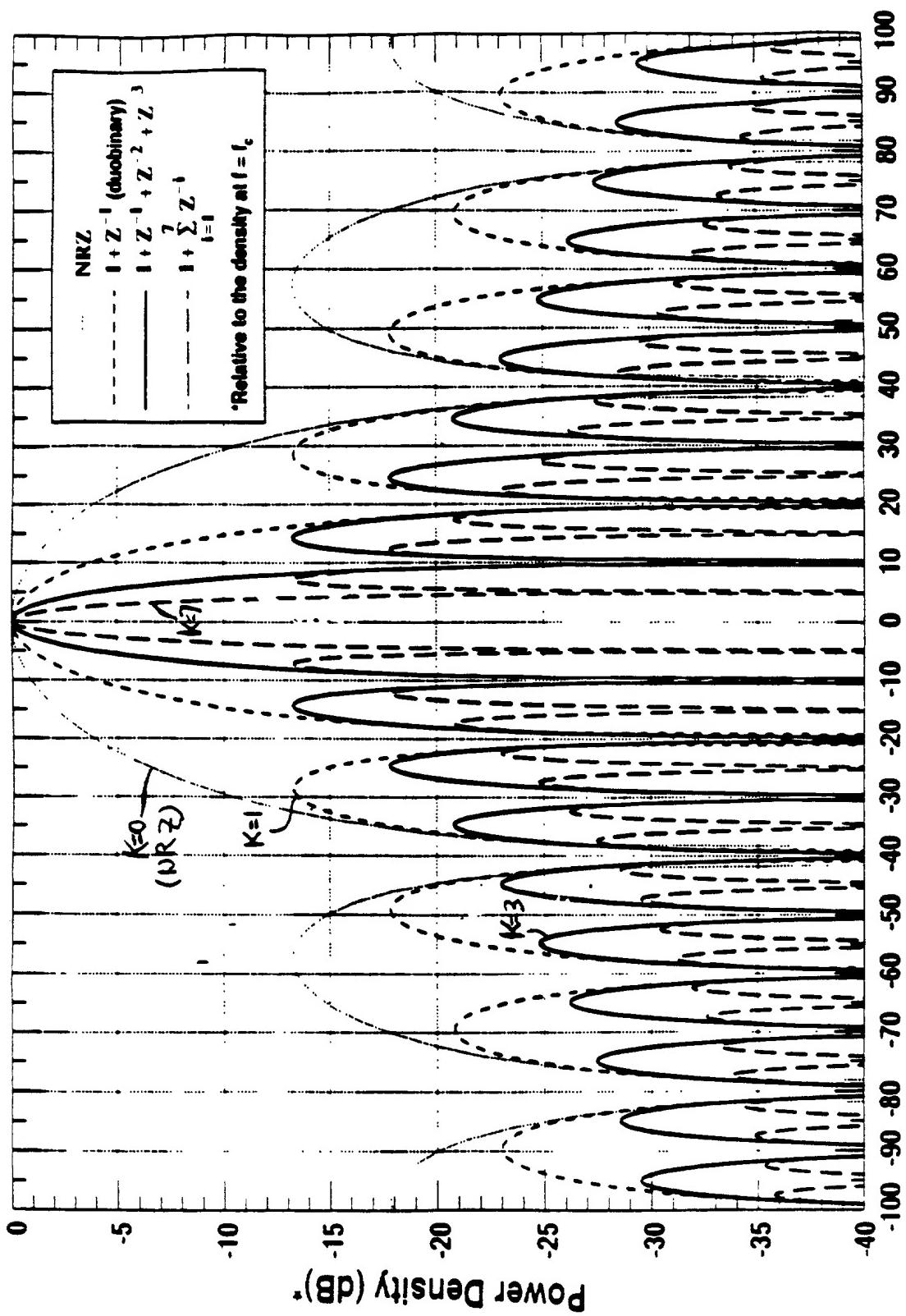
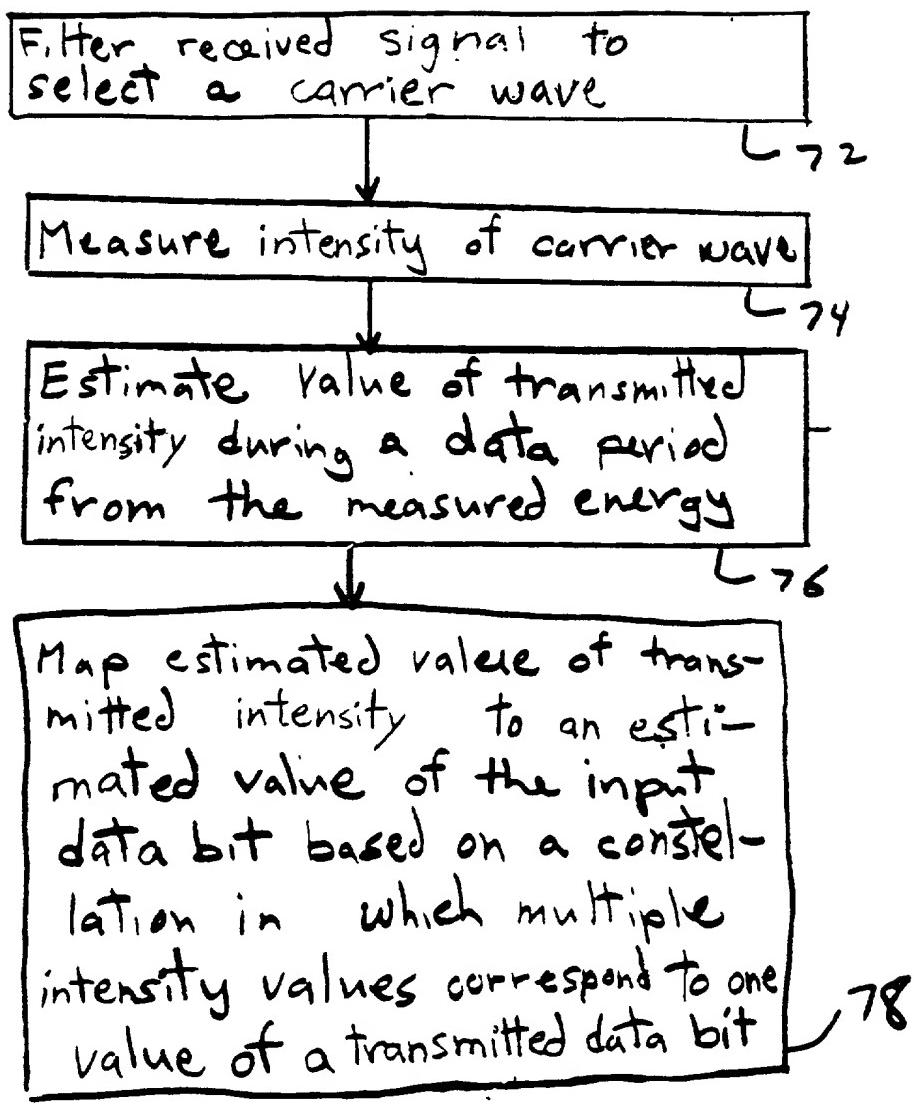


FIGURE 4





70 ↑

Figure 5

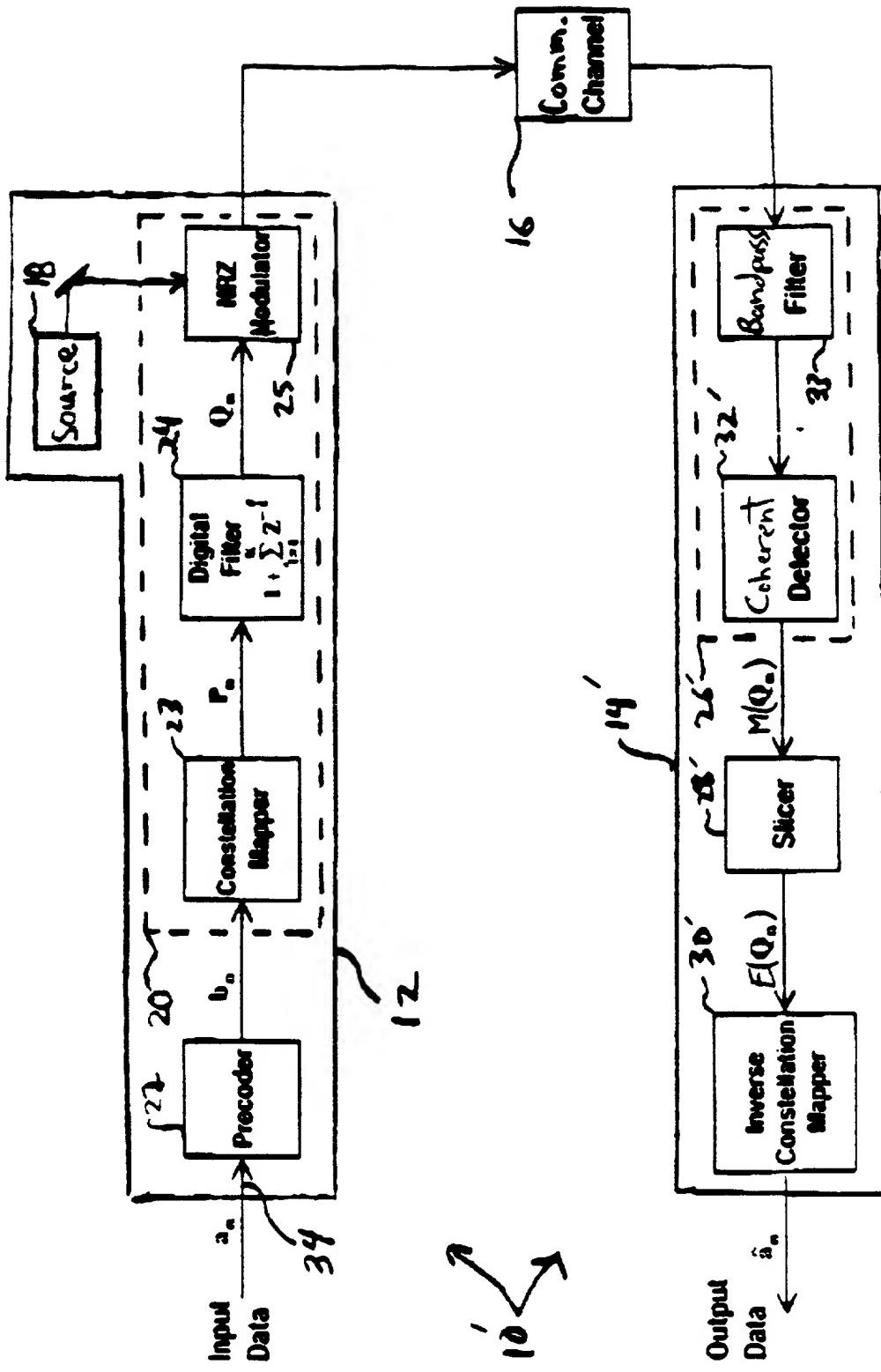
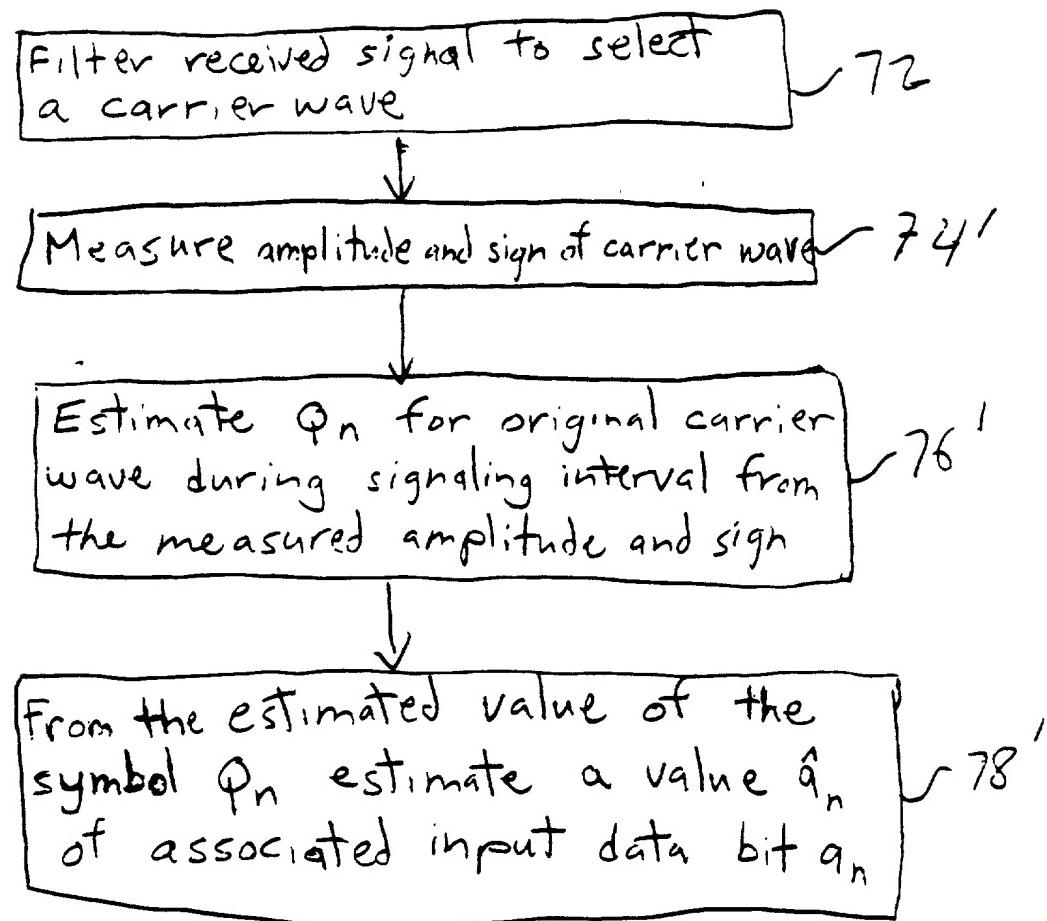


Figure 6



↑
70'

FIG. 7

FIGURE 8

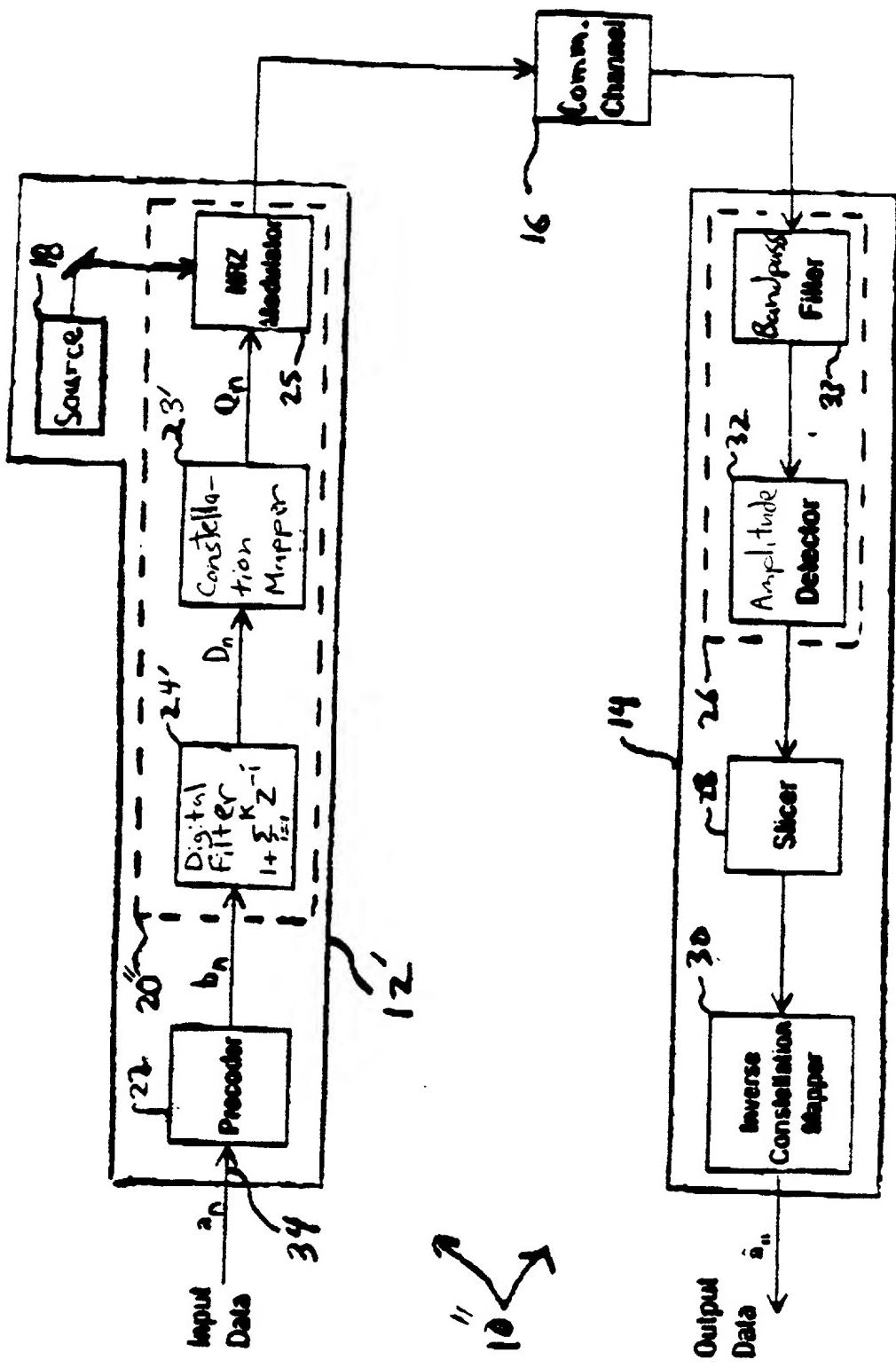


FIGURE 9

| Digital Filter | Normalized Signal Bandwidth* | Loss in Receiver Sensitivity (dB)* | Transmitter Signal Amplitudes Q_n | Number of Receiver Signal Amplitudes Q_n^2 |
|--------------------------------|------------------------------|------------------------------------|-------------------------------------|--|
| $1 + Z^{-1}$ (duobinary) | $\frac{1}{2}$ | 0 | 3 | 2 |
| $1 + Z^{-1} + Z^{-2} + Z^{-3}$ | $\frac{1}{4}$ | 3 | 5 | 3 |
| $1 + \sum_{i=1}^5 Z^{-i}$ | $\frac{1}{6}$ | 4.8 | 7 | 4 |
| $1 + \sum_{i=1}^7 Z^{-i}$ | $\frac{1}{8}$ | 6 | 9 | 5 |
| : | : | : | : | : |
| $1 + \sum_{i=1}^{15} Z^{-i}$ | $\frac{1}{16}$ | 9 | 17 | 9 |

*Relative to a baseline on/off NRZ modulation.